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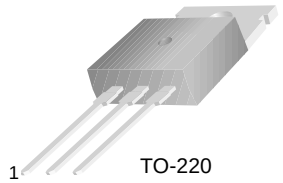
FAIRCHILD SEMICONDUCTOR®

Jameco Part Number 32985

TIP105/106/107

Monolithic Construction With Built In Base-Emitter Shunt Resistors

- High DC Current Gain : h_{FE}=1000 @ V_{CE}= -4V, I_C= -3A (Min.)
- Collector-Emitter Sustaining Voltage
- Low Collector-Emitter Saturation Voltage
- Industrial Use
- Complementary to TIP100/101/102



TO-220

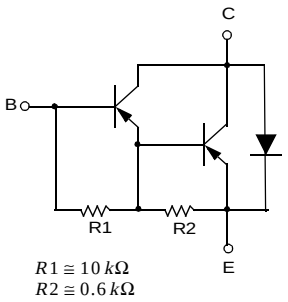
1.Base 2.Collector 3.Emitter

PNP Epitaxial Silicon Darlington Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : TIP105	- 60	V
	: TIP106	- 80	V
	: TIP107	- 100	V
V_{CEO}	Collector-Emitter Voltage : TIP105	- 60	V
	: TIP106	- 80	V
	: TIP107	- 100	V
V_{EBO}	Emitter-Base Voltage	- 5	V
I_C	Collector Current (DC)	- 8	A
I_{CP}	Collector Current (Pulse)	- 15	A
I_B	Base Current (DC)	- 1	A
P_C	Collector Dissipation (T_a=25°C)	2	W
	Collector Dissipation (T_C=25°C)	80	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 ~ 150	°C

Equivalent Circuit



$R1 \cong 10\,k\Omega$
$R2 \cong 0.6\,k\Omega$

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
V_{CEO}(sus)	Collector-Emitter Sustaining Voltage				
	: TIP105	I_C = -30mA, I_B = 0	-60		V
	: TIP106		-80		V
	: TIP107		-100		V
I_{CEO}	Collector Cut-off Current				
	: TIP105	V_{CE} = -30V, I_B = 0		-50	μA
	: TIP106	V_{CE} = -40V, I_B = 0		-50	μA
	: TIP107	V_{CE} = -50V, I_B = 0		-50	μA
I_{CBO}	Collector Cut-off Current				
	: TIP105	V_{CB} = -60V, I_E = 0		-50	μA
	: TIP106	V_{CB} = -80V, I_E = 0		-50	μA
	: TIP107	V_{CB} = -100V, I_E = 0		-50	μA
I_{EBO}	Emitter Cut-off Current	V_{BE}= -5V, I_C = 0		-2	mA
h_{FE}	DC Current Gain	V_{CE} = -4V, I_C = -3A	1000	20000	
		V_{CE} = -4V, I_C = -8A	200		
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = -3A, I_B = -6mA		-2	V
		I_C = -8A, I_B = -80mA		-2.5	V
V_{BE}(on)	Base-Emitter ON Voltage	V_{CE} = -4V, I_C = -8A		-2.8	V
C_{ob}	Output Capacitance	V_{CB} = -10V, I_E = 0, f = 0.1MHz		300	pF

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Typical Characteristics

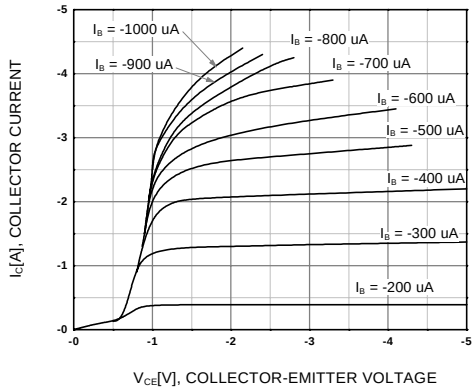

Figure 1. Static Characteristic

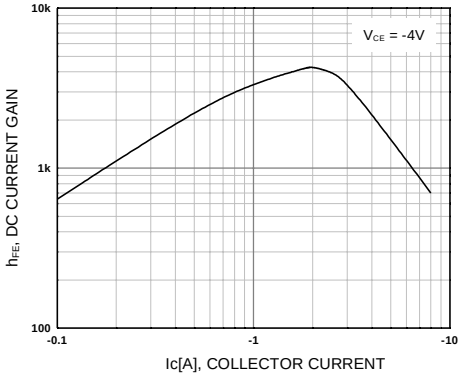

Figure 2. DC current Gain

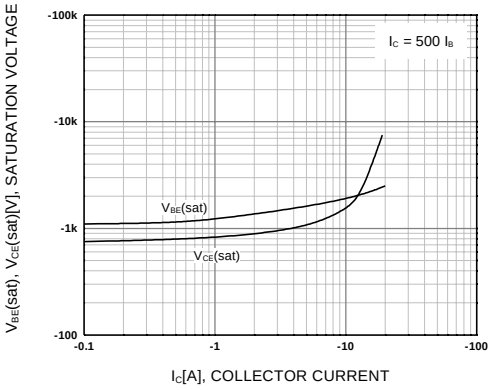

Figure 3. Collector-Emitter Saturation Voltage Base-Emitter Saturation Voltage

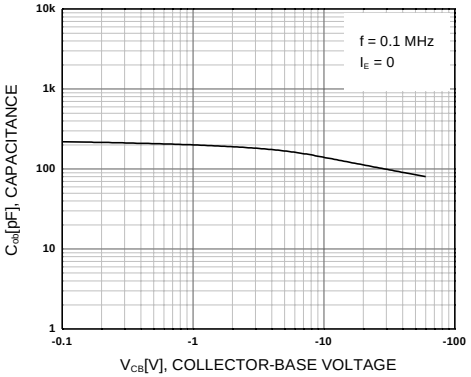

Figure 4. Collector Output Capacitance

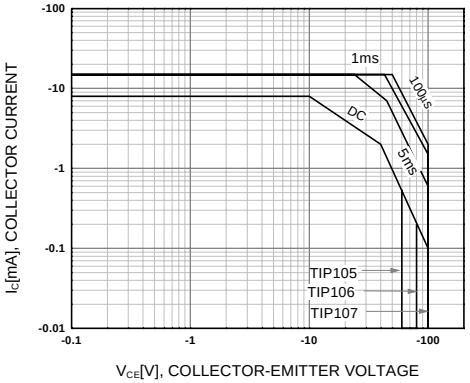

Figure 5. Safe Operating Area

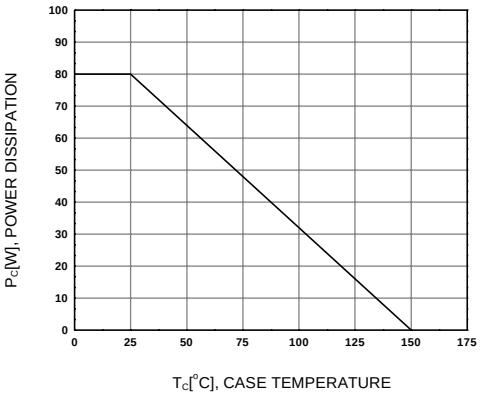

Figure 6. Power Derating

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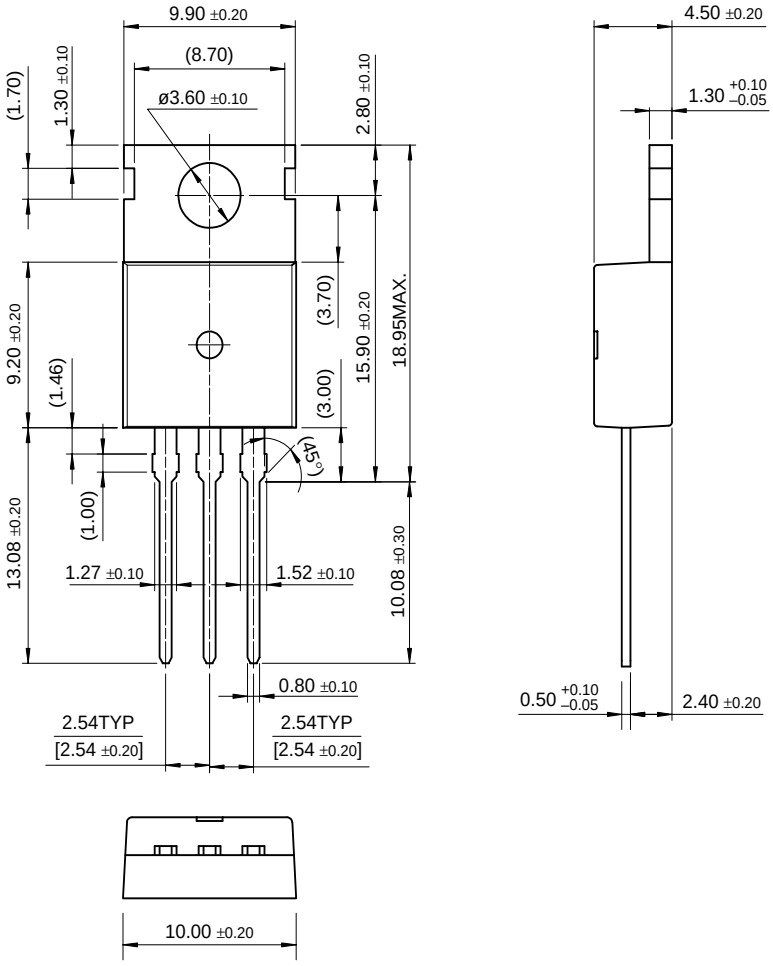
Package Demensions

TO-220



Dimensions in Millimeters

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